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Educational Research Bulletin

NOVEMBER 15, 1933
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The Bureau of Educational Research in 1932-33

By W. W. CHARTERS

The accompanying reports from the Divisions of the Bureau when compared with the decennial report of 1932 indicate the trend of investigations and services carried on during the current year. Specifically, expansion has not been easy because of the contraction of the funds of the Bureau. In common with all departments in the University the appropriations have shrunk although the administration in the face of the more insistent claims of instruction has dealt fairly with the Bureau and has made it possible to retain the framework of the organization. That is to say, all essential activities are maintained though with smaller appropriations than usual. For instance, the Educational Research Bulletin is continued, but it is published monthly rather than fortnightly. The Divisions are intact, but with a smaller personnel and less money for maintenance.

A heavy load has been placed upon the Appointments Division because of the number of unplaced teachers. Yet as many teachers were placed in 1933 as in 1932 but in smaller schools, on the one hand, and in larger numbers of experienced teachers, on the other. The Survey Division is doing less work upon building programs for obvious reasons, but has done notable work in educational surveys such as the Soldiers' and Sailors' Orphans' Home at Xenia. Assistance has been sought from this division by the Federal Government in its building program in Ohio. The Division of Accomplishment Tests has but slightly expanded its already heavy program carried on for departments of the University and for the national testing program of the American Council of Education.

The Reference Division with less assistance than in former

years has been subjected to a much heavier student-load than in previous years. The increase over 1931–32 was 55 per cent. Owing to a national decrease in published materials the acquisitions are somewhat less numerous than last year. The Personnel Division has been extremely busy providing assistance in preparing wage scales, assisting in planning changes arising from contraction in the University, and in a variety of campus services of a technical sort. The Radio Division has during the year completed a survey of all techniques of measuring the radio audiences and has the study in form for early publication. It has carried on a series of studies, notable among which are measures of the influence of radio lessons upon the pronunciation of foreign languages by high-school students and the relative effectiveness of reading and listening over the radio. The Editorial Division carrying on with a depleted staff has published the *Journal of Higher Education* and the EDUCATIONAL RESEARCH BULLETIN, one set of proceedings, and two monographs. Much material awaits printing as soon as times improve. The Curriculum Division has contributed, among other projects, a study on motion-picture appreciation in the form of a textbook to be used in high schools with the objective of teaching adolescents to discriminate between good and poor motion pictures. More detailed statements of the activities of the Bureau are presented in the reports which follow.

Appointments Division

By EARL W. ANDERSON

DURING 1932 the Appointments Office directly aided 199 teachers in securing teaching positions. Of these 84 were placed directly, and 115 were aided directly in that detailed data were furnished to employers who later hired them. The office received 558 calls for teachers, recommended 1,160 persons, sent out 3,728 sets of credentials, held 3,883 interviews. Almost all of the vacancies during 1933 have been in the small public-school systems. There have been few calls from colleges or from schools of cities. The public schools of larger cities are still reducing their staffs. Former teachers and persons who would not normally have

been interested in teaching are crowding this field. It appears that the placements made by the Appointments Office for 1933 will be a little in excess of those for 1932. More service, however, has been given to experienced teachers than heretofore, and it appears that there will be about a 10-per cent decrease in the placement of the graduates of the College of Education during 1933, as compared with 1932 when 40 per cent were placed.

Our file of more than thirty-six hundred teachers is being utilized more and more by school officials. This is evident from the fact that the number of teachers who are assisted through our furnishing material is increasing each year.

PROGRESS has been made in tabulating and analyzing data regarding the output of teacher-training institutions of Ohio and the demand for new teachers within the state. This study, covering a three-year period, is gradually rounding out and should be completed within the next six months.

The writer assisted in the survey of the Ohio Soldiers' and Sailors' Orphans' Home at Xenia. He contributed a section of the *First Yearbook of School Law*, and he is chairman of a committee of the Ohio Education Association which set up a program for the co-ordination of educational forces of the state.

Survey Division

By T. C. HOLY

THE major enterprise of the Division during the year ending September 1, 1933, was the survey of the Ohio Soldiers' and Sailors' Orphans' Home at Xenia, Ohio, which was begun in July, 1932. The survey staff consisted of 38 members from Ohio State University, the State Department of Education, the Department of Public Welfare, Ohio Wesleyan University, University of Cincinnati, and the Ex-Pupils' Association of the Home. Out of 116 specific recommendations made in this survey, the Board of Trustees approved all but two, both of which were of minor importance.[1]

The Division continued the practice of the last five years,

[1]The study has now been printed as Bureau of Educational Research Monograph, No. 18.

of collecting during the month of September from Ohio cities and exempted-village school districts data on enrollment, tax valuation, tax levies, bonded debt, both school and municipal, amount of school bonds refunded, and special levies and bond issues to be submitted at the November election. Similar data for the schools in the 88 county districts which were submitting either special levies or school bond issues or both at the November election were also collected and distributed. Immediately following the election the results of both bond issues and special levies for all districts were tabulated.

Two separate studies on the relation between the premiums paid for school-plant insurance and reported fire losses in the state of Ohio were made during the year. The first of these covered 1930 and 1931 and the second, 1932. Individual data were collected for each of the 109 city and the 49 exempted-village school districts and the 88 county school districts. These data were tabulated and sent to county, city, and exempted-village superintendents. At the request of the State Department of Education, two different bills setting up a state plan for school-plant insurance for Ohio were drafted, using these studies as the basis. Consideration was given them by committees of the 1933 Assembly, but no action was taken.

A comparison of the 1931 and 1932 real-estate and public-utility valuations on which the 1932 and 1933 taxes were collected was made of Ohio county, city, and exempted-village school districts. These tabulations were sent to the superintendents in these districts and to other interested groups.

Division of Accomplishment Tests

By R. W. TYLER

THE major service function of this Division is to assist departments in the University to construct examinations for their courses and to provide technical assistance in the planning and evaluation of educational experiments. One of the interesting uses of the new measuring instruments developed during the past year was the evaluation of the effectiveness of new courses offered for the first time as a part of the new curriculum for the College of Education. A pre-

liminary evaluation was made of a functional course in history of education and an integrated course in social sciences.

Another experiment, which was begun during the past year, involves the measurement of differences between large and small classes in elementary zoölogy. This project required the development of measuring instruments which would measure small differences and which would measure a variety of objectives characteristic of the elementary-zoölogy courses. In connection with this project tests were developed for evaluating laboratory skills of various sorts.

The general technique which has been followed in the development of achievement tests was applied during the year to four new departments of the University in addition to the departments with which the Division has been working in previous years. This involved the preparation of a total of 93 new examinations during the past year.

This Division has also been concerned with the preparation and experimental use of self-directive practice exercises in certain fields of college work in which the learning material used in the past has not been found highly effective. The experiment with mathematical materials in dairy technology was completed revealing clearly the value of self-directive exercises for students in this field. Exercises were also developed for interpreting educational statistics and were used with three classes during the summer of 1933.

An interesting project involving both statistics and measurements was a study of adult reading in five communities of New York City, a project conducted in co-operation with the Graduate Library School of the University of Chicago. This study revealed the differences in reading interests and habits of various occupational groups and of various social and economic levels. The study contributed a method for libraries to use in evaluating their work.

The research function of this Division lies in the development of instruments for measuring a wider variety of objectives than covered by the usual examinations and in the formulation of procedures for educational experimentation which may be used in college classes. During the past year methods were developed for measuring eleven objectives which we had not been testing, and four methods of control were developed for use in experimentation with botany, zoölogy, and education.

Reference Division

By RUTH SEEGER

For the period of September 1, 1932, to September 1, 1933, we are able to report an increased attendance. Average monthly attendance for this period was 1,727 as compared with an average of 1,115 for the previous year. This increased attendance has been handled with a reduced staff.

During the year the library has received 1,002 books, 869 pamphlets, 500 college catalogues, 40 tests, 116 courses of study, 16 school laws, and 93 school reports. The total number of acquisitions is 2,636, slightly under the number reported for last year. This, however, is readily understood when one remembers that in times of economic stress publishing concerns greatly reduce their output. This is particularly true in the case of such publishers (mainly universities and colleges) as are partially dependent upon public funds as are the bulk of institutions from which we receive publications.

Our indexing work has gone forward as usual. The past year has seen an addition of 12,915 subject and author cards to our index file. These cards cover periodical material, pamphlets, books, and elusive typed materials. Copies of those cards for such periodicals as are not indexed in the *Education Index* are regularly supplied to Teachers College, Columbia University. Thus, it is seen, we are engaged in a form of co-operative cataloguing which is, we feel, desirable.

Personnel Division

By H. W. COWLEY

Two major activities engage the attention of the Personnel Division of the Bureau of Educational Research: research and service in student personnel administration, and research and service in general administration. For the academic year 1933–34, nine major projects have thus far been listed, all but two continuing from last year. Four of these problems have to do with student personnel administration and five with general administration.

The personnel study which will engage most of the attention of the Division during the next few months is a study of student traditions in American colleges and universities. For a number of years the writer has been interested in the influence that traditional modes of behavior have upon students and student life. Several months ago, therefore, he succeeded in interesting about twoscore sociologists in as many colleges and universities in having their major students in sociology collect data concerning the traditions at their institutions. Thus far about ten institutions have already collected and turned in their material, and the others are now in the process of completing their studies. These will be evaluated, and it is hoped that from the material a monograph which will discuss the sociological principles underlying traditional behavior among students will be forthcoming.

The second personnel study, which the Division will concentrate upon, is the development of a scale of social adjustment. It is generally recognized that many students come to and remain in college socially maladjusted. Unfortunately, students who are, for one reason or another, socially inept and even emotionally jumbled because of their ineptness graduate from college and continue to remain ineffective citizens. This scale is being evolved to help discover the socially inadequate student early during his freshman year so that he may be wisely counseled and directed to better social mastery.

The two other personnel projects are the production of a vocational monograph for the College of Veterinary Medicine and a study of the persistence and scholastic performance of the Freshmen who entered Ohio State University in 1928.

Two of the administrative investigations have to do with the reorganization of educational institutions. The first is the administrative reorganization of the College of Veterinary Medicine, which has been a continuing project for the past two years. The writer has been working with the administrative officers of the College to help them reorganize their procedures and to assist them in writing up their practices in standard reference form. The same sort of work has been carried on at the Ohio State School for the Deaf for the past two years, and will be continued during the current year.

A third administrative study has to do with extra-instruc-

tional costs at Ohio State University. The serious budget cuts made by the Ohio legislature have necessitated rigorous economies in the management of the University, and at the proposal of the President of the University and a special committee of the Board of Trustees, the Personnel Division has been called upon to gather and interpret facts concerning University costs other than those having to do with teaching.

In this same connection the Personnel Division is making a study for the Vice-President of the public services of the University. Ohio State has always performed many services for the farmers, the educators, the industries, and the professions of the state of Ohio. These have been spread in wide ramifications during the past few years, and in 1932 the Board of Trustees appointed a vice-president of the University to assume responsibility for the public relations of the University. At the suggestion of this new officer, a study is being made of what services the University is now performing.

Finally, the Personnel Division is making a study of the rise and growth of the office of vice-president in American colleges and universities. During the past few years, large institutions such as the University of Chicago, the University of Michigan, Duke University, the University of Pennsylvania, and Ohio State University have appointed vice-presidents. The development of this office has raised numerous administrative problems, and these are now being canvassed by the Division in an attempt better to understand administration in higher education. It is hoped that the study will produce a monograph for the use of college administrators.

Radio Division

By F. H. LUMLEY

THE research work of the Radio Division of the Bureau of Educational Research is being carried on under a grant from the Payne Fund of New York City. During the past year, the studies described here have been completed or brought near to completion.

At present, one of the most important problems facing the radio broadcaster and also the radio listener is agreement on

what should be broadcast. The broadcaster needs to have methods to determine what listeners want to hear and what is of most benefit to them. With this in mind, the Radio Division has prepared a comprehensive and critical report on the methods now used by radio stations and broadcasting agencies, and has also made suggestions for the improvement and validation of these methods. This report will be published shortly in monograph form.

In addition, actual studies of the radio audience have been made at the request of educational organizations. The Radio Division made a survey of children's preferences for radio programs for the Ohio School of the Air and also helped plan report forms and summarize reports from teachers concerning the use of the Ohio School of the Air programs. The Division has also co-operated with WOSU in determining the use made of its programs.

A study completed this past summer has shown that listening to radio broadcasting helps classroom pupils learn the correct pronunciation and intonation of a foreign language. In making this study, the pronunciation of pupils was recorded before and after listening to radio programs received in the classroom, and the improvement was compared with that of similar pupils who did not hear the radio programs. This evidence is important in the face of the declining number of foreign-language radio courses offered in the United States as shown by a survey of such broadcasting.

Another study concerns pupils' comprehension of geography talks broadcast for school use. Already significant results have been obtained, showing the amount remembered when such talks are heard and when they are read in printed form. Further results show the types of information which can be clearly given in radio talks and the types which are not well understood or remembered. In this connection the method of presentation is also considered.

Various suggestions have been made with regard to the rate of speaking when giving radio talks. An analysis of present practice in this regard has shown that most speakers deliver their talks at the rate of about one hundred sixty words a minute. News broadcasters enliven their reports by giving thirty more words a minute.

For the coming year, attention will be concentrated on two

problems, one of a general psychological nature and the other more immediately practical. The first concerns the relative importance of auditory (radio) and visual (reading) methods of presenting information and ideas. The second will include visits to schools to observe reception and use of broadcasts.

Editorial Division

By JOSEPHINE H. MacLATCHY

THE chief function of the Editorial Division is the editing of the regular and occasional publications of the Bureau, the proofreading, and the supervision of such materials until they are ready for distribution. During the past year the Division has cared for 13 issues of the EDUCATIONAL RESEARCH BULLETIN; 9 issues of the *Journal of Higher Education; Education on the Air*, 1933 (Proceedings of the Fourth Institute for Education by Radio); and two monographs belonging to the Bureau of Educational Research Monograph series, *The Duties of Ohio Public-Health Commissioners*, and *Survey of the Ohio Soldiers' and Sailors' Orphans' Home*.

The Division also cares for the sales of all publications of the Bureau of Educational Research and the books sent in for review by other publishers. During the past year 264 books, sent in by 75 publishers, have been received for review in the EDUCATIONAL RESEARCH BULLETIN; and 112 books, sent in by 55 publishers, have been received by the *Journal of Higher Education*.

ALTHOUGH the research activities of the Editorial Division have been somewhat curtailed during the past year because of a depleted staff and because of smaller funds for clerical assistance, several studies have been carried on. Statistical evidence regarding the reliability of the second and third trials of subtests of the Number Test for Pupils Entering Grade One has been gathered and is being used in a revision.

Fifteen children with serious reading difficulties have been tutored under the direction of the writer. The amount and kind of reading materials suited to each child have been carefully watched, the vocabularies of many books have been

checked to be sure of their use for particular children, a suitable scheme of word study has been arranged for each child, objective tests based on the short stories in readers and on the chapters in books such as *Robin Hood*, *King Arthur*, *Red Feathers*, *Arabian Nights*, and *Robinson Crusoe* have been prepared. Devices which have aided these children in reading their arithmetic problems and their history and geography textbooks have been devised.

Three boys weak in arithmetic have been tutored. A diagnostic test was devised by which the points of weakness in each child's understanding of processes and computations were determined. Practice exercises to help in overcoming these weaknesses were arranged suited to each boy's difficulties, and analytic practice exercises in problem solving were devised. Some work in spelling was done with the children who had weakness in this subject.

The school authorities at Cincinnati kindly allowed the teachers to give a series of tests to all their fifth-grade pupils as the basis of a study of the arithmetic ability of a large fifth-grade population. Mr. Raths, a research assistant in the Bureau, prepared the test. This study of arithmetic knowledge will be correlated with the study of first-grade number made in 1928, for these children now in the fifth-grade were the children formerly tested. The test was arranged to cover the different types of problem solving which the average fifth-grade pupil encounters in school. The test was in five forms which were serial rather than equivalent. Since each test took about 45 minutes to give, the forms were distributed in rotation—A, B, C, D, and E—to the pupils of a class so that in a group of 40 children, 8 copies of each form were filled in.

Curriculum Division

By EDGAR DALE

DURING the past year the three major projects dealing with motion pictures which have engaged the attention of this department were completed. An experimental edition of *How to Appreciate Motion Pictures* was tried out in a number of the high schools in Ohio and other states. A

number of practical techniques were developed to test the interest and value of such materials in teaching motion-picture discrimination. Searching criticisms of teachers on the content and approach used in these lessons proved highly valuable, and suggested the need for further study of experimental publication of textbooks. As a result of our investigation, a completely new volume on this topic was written and is now available in the Payne Fund series "Motion Pictures and Youth." Studies of the content of motion pictures and children's attendance at motion pictures have also been completed and will be published shortly.

PRACTICAL use has been made of the data gathered on the familiarity of the words in the Thorndike *Teacher's Word Book*. Through the utilization of such word lists we have discovered that one can develop reading materials in such a way as to make them fit the vocabulary abilities of the readers. Master lists have been made of the technical terms in three fields, business, health, and the social studies. Further, familiarity scores for pupils in the eighth, tenth, and twelfth grades have been developed for words in the social studies.

With the increasing use of leisure time, it becomes imperative that avocational guidance be put on as sound and scientific a basis as vocational guidance. With a view of developing satisfactory techniques for measuring avocational interests, a project was carried out to test the relative interest of high-school pupils in 25 different hobbies. A paired comparison technique was utilized. Through this method we were able to develop an instrument which gives reliable evidence concerning group interests. We discovered, for example, that out of 25 hobbies of high-school pupils, only three, camping, hiking, and swimming, consistently ranked above "going to the movies."

Aid in curriculum revision has been given to several school systems through techniques of setting up studies and development of programs of research.

Section Achievement Comparison

By MAGGIE A. POWELL

So-called homogeneous grouping has been used in the Cleveland schools for several years. The basis for this grouping is the intelligence quotient (*IQ*) and the probable learning rate (*PLR*) of pupils computed from group or from individual tests. All pupils are tested by group tests in the sixth grade, and their probable learning rates are used as the basis for the classification in the junior high-school classes. The junior high-school teachers have come to expect a certain amount of work from a group of students judged by its average rating on these classification tests. They have been too often content if a higher section was apparently doing more than the section below it, and an objective check of such evidence has not always been possible.

The study described here is based on a series of objective tests given in all the academic classes of Kennard Junior High School of Cleveland during the week of October 24, 1932. The subject-matter tested was that portion of the semester assignment agreed upon by the faculty as the work for the opening seven weeks of the semester. In each half-grade the sections ranking high in probable learning rates were supposed to cover much more of the allotted work in a more intensive manner than the sections with low rankings. All sections covered enough of the same work to make the use of one test in each subject possible. The tests were sufficiently long to be used as a check for all sections of the half-grade.

The tests were made by teachers in the department or by teachers in the same department in a near-by junior high school which is under the same principal. Since the work for each marking period was agreed upon between the two schools in advance, a test made in either building was a fair test in the other building. Whatever advantage one building may have had on tests made in that building was counterbalanced on the tests made in the other building. There were faults in the tests, but since all groups were scored uniformly no class had an advantage.

Home-room sections went to academic classes with so few irregularities that it was possible to use the median probable

learning rates of the home-room groups as those of the academic class groups. For purposes of general comparison in achievement this was deemed accurate enough. All the pupils of each half-grade (VII–B, VII–A, VIII–B, and VIII–A) were grouped by the classification test prepared for that half-grade.

TABLE I

SUMMARY OF TEST RESULTS

	Median *PLR*	Literature	Grammar and Composition	Mathematics	Social Studies
(1)	(2)	(3)	(4)	(5)	(6)
	Grade VII–B				
Section 1	114	38	82	46	66
Section 2	106	29	81	40	63
Section 3	102	26	65	38	60
Section 4	95	29	77	41	59
Section 5	91	22	65	28	54
Possible score	.....	50	100	58	71
	Grade VII–A				
Section 1	108	47	71	17	52
Section 2	97	45	60	11	39
Section 3	88	29	59	9	34
Possible Score	.....	50	100	32	70
	Grade VIII–B				
Section 1	103	30	88	30	49
Section 2	93	30	74	24	38
Section 3	86	23	67	18	35
Possible score	.....	35	100	39	86
	Grade VIII–A				
Section 1	104	21	76	18	28
Section 2	89	16	50	13	23
Possible score	.....	25	90	25	45

THE median probable learning rate of each group is given in Table I with the possible score for each test and the median attained on each test. All numbers which appear in Table I have been corrected to the nearest whole number. As a whole the median scores on the tests follow the same

ranks as those of the median probable learning rates of the section. The only marked exception is that of the Section 4 of VII–B which ranks above Section 3 in grammar and in mathematics. There is, in some cases, less difference in median achievement than the difference in median learning rates might lead one to expect. If the interpretation of results went no further, the decision would be that they are fairly satisfactory.

A ratio between the test score and the median probable learning rates of each section gives a somewhat different picture. For convenience we may call this ratio an achievement ratio; that is,

$$\text{Achievement ratio} = \frac{\text{median test score}}{\text{median } PLR}$$

This achievement ratio was computed for each subject using the same median rate of the group for each subject. The absolute value of the ratio in one set of results bears no relation to the absolute value of any other set of results. A relationship between sets of values would be possible only if all tests were of equal value in point scores. The achievement ratios bring up some points not revealed by the median test scores.

In the VII–B and the VII–A sections, the sections ranking highest as to learning rates and test medians do not at all rank highest as to achievement ratios. The Section 1 with the highest probable-learning median in VII–B ranks first for literature, but two other groups equal or exceed it in grammar; Section 4 exceeds it in mathematics; and all four of the other sections exceed it in social studies. The Section 1 of VII–A is lower than the Section 2 in literature, lower than the Section 3 in grammar, but highest in mathematics and in social studies.

Section 1 of VIII–B is below Section 2 in literature but above the others in all other subjects. Section 1 of VIII–A is above the other section in all subjects.

These comparisons would indicate that some of the sections with the highest median probable learning rates for each half-grade are not working as much as other sections. Teachers are apparently putting more time and effort on other sections than on these with the greatest possibilities for academic attainment. For several sections the teachers have commented on the desire of pupils to want to be much heard and on their aversion to everyday independent study and drill.

As a group these pupils of the highest sections are quite capable of much pupil activity in the classroom, but they are not so agreeable about acquiring subject-matter accurately. Whatever the explanation for this attitude may be, the problem for teachers of these highest groups is that of demanding and

TABLE II

ACHIEVEMENT RATIOS

	Literature	Grammar and Composition	Mathematics	Social Studies
(1)	(2)	(3)	(4)	(5)
	Grade VII–B			
Section 1	33*	72	40	58
Section 2	27	76	38	59
Section 3	26	64	37	59
Section 4	31	81*	43*	62*
Section 5	24	71	31	59
	Grade VII–A			
Section 1	44	66	16*	48*
Section 2	46*	62	11	40
Section 3	33	67*	10	39
	Grade VIII–B			
Section 1	29	85*	29*	48*
Section 2	32*	80	26	41
Section 3	27	78	21	41
	Grade VIII–A			
Section 1	20*	73*	17*	27*
Section 2	18	56	15	26

*Indicates the highest achievement ratio in the section.

getting more definite, accurate work and of maintaining a higher standard than that now prevailing in these sections.

THE highest achievement ratio for each half-grade and for each subject is starred in Table II. Using this highest ratio as indicative of highest results in comparison with mental ability, we may compute scores which all classes should have made to measure up to ability ratings, attempting to have all

classes work at a similar rate of achievement. From the formula just given for computing the achievement ratio we find the desired test score by changing the form to

Desired test score = median *PLR* + highest achievement ratio.

Using the median probable learning rate of each group as given in Table I and the highest achievement ratio for the

TABLE III

ACTUAL AND PROPOSED SCORES

	Literature		Grammar		Mathematics		Social Studies	
	Actual Scores	Desired Scores	Actual Scores	Desired Scores	Actual Scores	Desired Scores	Actual Scores	Desired Scores
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Grade VII–B							
Section 1	38*	38	82	92	46	49	66	71
Section 2	29	35	81	86	40	46	63	66
Section 3	26	34	65	83	38	44	60	63
Section 4	29	31	77*	77	41*	41	59*	59
Section 5	22	30	65	73	28	39	54	56
	Grade VII–A							
Section 1	47	50	71	73	17*	17	52*	52
Section 2	45*	45	60	65	11	16	39	47
Section 3	29	40	59*	59	9	14	34	42
	Grade VIII–B							
Section 1	30	33	88*	88	30*	30	49*	49
Section 2	30*	30	74	79	24	27	38	45
Section 3	23	28	67	73	18	25	35	41
	Grade VIII–A							
Section 1	21*	21	76*	76	18*	18	28*	28
Section 2	16	18	50	65	13	15	23	24

*Indicates the class that had the highest achievement ratio, hence same score for proposed score.

half-grade in each subject, we may compute the desired or proposed scores for each group in each subject. These proposed scores together with the scores actually made are given in Table III.

The results are now in a form that may be easily interpreted

by all teachers. It has proved interesting to follow through the results for each classroom teacher. Some teachers are apparently coaching low sections at the expense of high sections. Whatever diagnosis may be possible from these results is worth while if it leads to some remedial work to bring the achievement of sections more nearly to an even basis. These results have been discussed with teachers and the teachers are interested in what the results of later testing will disclose. From a supervisory standpoint the investigation has been valuable.

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Radio's Rate of Speech

By F. H. LUMLEY

MANY persons when speaking over the radio are governed by different rules than when they are making a platform address or talking in a discussion group. Political speakers on the platform have for years used what might be called a relatively slow delivery. Is there any need for this when the radio is used as the means of communication between the politician and his audience? We believe that the teacher in the ordinary classroom may talk with any reasonable degree of rapidity, but those teachers broadcasting are cautioned to slow their speech so that the average child may understand it. In the first place, one may inquire whether it is necessary for the radio teacher to talk in this relatively unhurried fashion. What is the general effect on the children listening? Second, we may wonder whether any less information is obtained when the tempo is swift than when it is much slower. The radio teacher does not wish to go so slowly that she becomes uninteresting to the pupils, and so that she does not give them sufficient ideas for their work. On the other hand, she does not wish to go so fast that parts of the talk cannot be understood or related to each pupil's experience.

As a prelude to further study the Bureau of Educational Research, Ohio State University, has undertaken to find out the rate of speech which various types of speakers use in talking over the radio. The method of measuring the speech

rate is fairly simple. The talk or lecture or announcement, as it may be, is recorded on a wax record. At the time the record of the speech sound coming from the radio loud-speaker is being made a time bell sounds and is also recorded on the same wax record. The timing bell sounds every four seconds. The record is then transcribed, or copies of the talk are obtained. While listening to the record, the relation of the timing bell to the words can be determined. The whole talk is then marked off in four-second intervals. The number of syllables and the number of words during an interval are counted. From these data it is possible to compute the average rate of speech in syllables and in words for the entire talk, or for sections of the talk. It is possible to compute the amount of deviation in rate for the four-second periods in the entire talk or portions of the talk. The ratio of syllables to words may also be secured.

THIS study on the rate of speech is only in its preliminary form, and the conclusions which are given must of necessity be confirmed. For purposes of rough classification, we may divide those persons talking over the radio into speakers and announcers. The announcers may be classified into musical announcers, commercial announcers, sports announcers, and so on. The speakers may be grouped on the basis of the subject-matter of their talks. There are news broadcasts, educational talks, and business or commercial talks. Needless to say, there are many other types of talks, and even these groupings might well be broken down further.

All of us have received an impression of snappiness or alertness in news broadcasts. This seems to be related to the rate of delivery of the speech in such broadcasts. For example, the average delivery of news broadcasts came out at almost 200 words per minute. This was the type of broadcast for which the rate of speech was most characteristic. For all the other groups it was fairly uniform. The rate for educational talks averaged about 160 words per minute. In no case did the average rate of speech for any educational talk exceed the average for Lowell Thomas' news reports. Persons dealing with such weighty matters as better business and building prosperity gave talks at a rate somewhat below 150 words per minute. The averages for announcers were all

about the same, comparing one with another. They gave their commercial speeches at the reasonable rate of 160 words per minute. In special instances it was noted that the announcer would describe the commercial product at a much slower rate than he used in announcing the actual programs.

In these studies it was thought that factors, such as variation in the rate of speech, would be found to be of significance. In spite of the fact that news broadcasts were delivered at a more rapid rate of speech than educational talks, there was, relatively speaking, no difference in the variation in rate. Individually, however, there were large differences. It may be that further study of this factor will reveal some significant relationships between type of material and variation in rate. Those persons giving talks on business, delivered them, not only at a lesser rate of speech, but with considerably less variation.

Elsewhere it has been shown that the speaker's choice of words determines in part the response which the audience will give to his talk. In connection with this it is interesting to obtain an index of the number of one-, two-, three-, and four-syllable words which each speaker used. Ordinarily there is a relation between the number of syllables of a word and its difficulty. Announcers for commercial programs, news broadcasters, and, strange to say, even educational broadcasters, averaged about two monosyllable words for every polysyllable. Speakers on business, in company with musical announcers, made use of language which had a slightly higher percentage of polysyllabic words.

Further analysis will be undertaken to show the relation, if any, between word-syllable index, rate of speech, variation in rate, and the response of the listeners to the talk, especially in the case of school programs.

EDITORIAL COMMENT

A NEWS story in the current issue of *Ohio Schools* by H. P. Nicely, of Tiffin, gives point to a principle of instruction in the social studies, that the subject-matter of high-school civics should be applied to practical problems. He turned the civics classes upon a "city beautiful" project by allowing them to transform a conspicuous eyesore in the neighborhood into a spot of beauty on the avenue. They managed the job; did much of the work; obtained co-operation; planted flowers, gathered them and distributed them to hospitals on a project that involved training in landscaping and gardening and a variety of other useful experiences. Most important of all it gave the students a model of beauty and the consciousness that loveliness can be created in a city by the combined effort of a few interested persons.

As one motors through the country he is struck by ugliness in every community that could easily be changed to beauty—heaps of cans, dirty yards, treeless spaces, evidences of neglect in scores of farms, and these spots often are more starkly disfiguring because the city as a whole is beautiful.

Yet in the high schools there are millions of young men and women with as great physical vigor as they will ever possess spending their mental energy on books and their physical energy upon little—young people who like to work on things they think are worth while and are capable of carrying a project through to an effective conclusion. They are using only a fraction of the energy which they possess; they would be happier using more.

Mr. Nicely used his students upon a simple landscape project. There are scores of community projects which are now being neglected that would be joyously performed by these young people if their imaginations were challenged. One community high-school board of education secured the home of the earliest pioneer, and the high-school boys and girls co-operated with the local historical society in making it a museum of the county by gathering from unexpected sources the furniture of the period. Another community turned the tin-can problem over to robust and resourceful

high-school students. Still another small town delegated the forestration of the streets and parks to the high-school students and faculty.

The youth of Ohio are compelled to stay in school until they are eighteen, and the age may well be increased in the future. These mature young people cannot wisely be confined to the study of schoolbooks when there are so many worthy community projects waiting to be done which in the doing will provide an education in civics, history, biology, physics, and chemistry. Merely as busy work they would be socially valuable, but, when meshed into the scheme of education, they would provide priceless opportunities for learning.

The objection will be raised by the conventional schoolmaster that there is no time for this sort of project in a school curriculum, but the validity of the objection depends upon the point of view. There are scores of boys and girls, compelled to stay in school by law, to whom work upon civic projects would be an ineffable release. And even for the average student it can easily be argued that facility in handling civic affairs of interest is of much greater value than a few extra theorems in algebra or an additional theme in English.

W.W.C.

A Protest

MAY I protest against Mr. Warner's review of Miss Dobbs's book, *First Steps in Art and Handwork*, which appeared in the EDUCATIONAL RESEARCH BULLETIN of October 11. Perhaps only those accustomed to working with little children and young teachers can evaluate a book dealing with this stage of development.

In Miss Dobbs's well-balanced presentation one sees the importance of creative effort and the relation between such effort and needed techniques. Skills are emphasized as necessary in order to release the creative impulse, and increasing control of skills becomes a factor of normal growth.

Self-direction of energy toward thoughtful expression is essential, although a manipulative stage is recognized when children are getting acquainted with new materials, tools, and processes. Emphasis is placed upon the value of crudities which represent the child's best effort, and upon the importance

of approval of such work. Perhaps no other writer has shown so clearly how to build upon these early crudities toward wholesome growth.

Granted that the curriculum tends to be organized into large units related to social life—a movement in which Miss Dobbs has been a national leader—the young teacher needs just this type of detailed help in order to guide her pupils toward thoughtful expression by means of art and handwork.

Miss Dobbs worked with Mr. Bonser over a period of many years. No difference in point of view was apparent to those knowing both.

FRANCES JENKINS
University of Cincinnati

Research News

The content of the regular English course was used for corrective reading in the University of Chicago High School with a group of students whose reading difficulties were sufficient to handicap their studies, but were not serious enough to warrant the time and expense necessary for individual treatment. The material presented was practically identical with that of all the other English sections. The instruction was on eight units, each covering one type of reading activity. For example, one type was "learning to find facts in a paragraph," another was "learning to identify the large general divisions or links in longer selections," and so on. A pre-test designed to measure ability in the particular skill was given before each unit was begun. Training was then given on that type of reading until the majority of the class made high scores on the unit test. If a student showed need of individual help he was given it, but the amount of help was carefully limited to that which it would be possible for a teacher with a full schedule to give. If a pre-test revealed sufficient facility in the type of reading under consideration, the student was excused from class work and allowed to do free reading. A variant of this procedure also was satisfactory. In this method, instruction was mainly on content. When the pupils showed by ineffective reading of the content materials that corrective instruction was needed, it was given.[4]

[4]Traxler, Arthur E. "Group Corrective Reading in the Seventh Grade—An Experiment," *School Review*, XLI (September, 1933), pp. 519–30.

READINGS

BRIGGS, THOMAS H. "The Changing World and the Curriculum," *Teachers College Record*, XXXV (October, 1933), pp. 33–35.

In this interesting and well-written article the author points out the need for a change in curriculum in light of changes in: society, communication and transportation, industry and public wealth, opportunities for leisure, democracy and politics, the family, science, ethics, and religion, and in view of the changing composition of the secondary schools themselves. The author points out that the schools must not only enrich their offerings and adjust education to society, but must attempt an educational program to help individuals to make changes in society.

KITSON, HARRY DEXTER. "Contemporary Biography for Use in Vocational Guidance," *Teachers College Record*, XXXV (October, 1933), pp. 25–32.

Sixty-nine biographies published within the last two years, catalogued under thirty-seven different occupations, are listed. This list should be of real interest to teachers seeking literature on vocational information.

EDMISTON, R. W. "Results of Testing Laboratory Instruction," *Science Education*, XVII (October, 1933), pp. 207–13.

Laboratory instruction includes more than the manipulation of apparatus. In this article four objectives are set up to be achieved in laboratory instruction. They are exactness in measurement, ability to apply knowledge, ability to devise laboratory procedures, and ability to complete the devised procedures. Test and study exercises are presented which show the situations used collecting evidence of the students' achievement in these objectives.

Coefficients of correlation between individual abilities and between the abilities and intelligence-test scores varied from .01 to .87. The relationship between intelligence-test scores and scores on the content test was .49; between intelligence-test scores and scores of exactness of measurement was .01; between scores on the content test and scores of exactness of measurement was .07. It appeared that achievement in one objective was not necessarily highly related with achievement in another objective.

REMMERS, H. H. "The Stability of Relative Excellence of High Schools," *School and Society*, XXXVIII (September 23, 1933), pp. 412–16.

The assumptions made by accrediting associations that high schools are relatively good or relatively poor from year to year and from subject to subject in the same year are questioned in this article. The relationship between the relative high-school averages in a variety of subjects in the school year 1930–31 and 1931–32 ranged from —.02 to .72 in Indiana high schools. The average coefficient of correlation is .33. Hence, a school judged relatively good one year was relatively poor the next year. The relative standing of the schools from year to year was not stable.

In the school year 1930–31, the relationship between the high-school averages in one subject and in another subject varied from —.25 to .68. In

1931–32, these coefficients of correlation varied from —.59 to .87. High schools may be relatively good in one subject and relatively poor in another subject during the same year.

This evidence supports the hypotheses that high schools are not uniformly good, but that there are individual differences among high schools in the quality of work in different subjects, that high schools are not consistently good from year to year.

WILLIAMS, JESSE FEIRING. "Some Essentials in Education," *Teachers College Record*, XXXV (October, 1933), pp. 16–24.

Five essentials of education presented and discussed were: The ability to continue the race in the social institutions of marriage and the home; the ability to work; the ability to play; the ability to live as an organism; and the ability to conserve individual and social standards and inheritances that promote a general good.

ANDERSON, ROSE G. "Concerning School Psychologists," *Psychological Clinic*, XXII (March–May, 1933), pp. 41–47.

Inherent in the development of the application of psychology to school problems there has been, Miss Anderson says, "the tending to stress diagnosis and to put too exclusive reliance upon testing techniques." Although testing is important, even in some cases indispensable, it is not enough. The psychologist assists most in making adjustments which involve an orientation of emotional, social, and physical facts, the integration of the information gathered, its interpretation in terms intelligible and acceptable to the school, and helpful to the school and to the child. The psychologist must be able not only to interpret the test, but to interpret the child to his teacher, to his parents, to his associates, and to himself, and often the parents and the teacher to the child.

In Paper Covers

EUBANK, LOUIS ALLEN. *The Organization and Administration of Laboratory Schools in State Teachers Colleges*. Kirksville, Missouri: Northeast Missouri State Teachers College, 1931. 89 pp. (Bulletin Vol. XXXI, No. 4)

Three classes of laboratory schools were found in this questionnaire study in which 85 state teachers' colleges co-operated: the institutional laboratory school, the affiliated laboratory school, and the cadet laboratory school. Eighty-nine per cent of the colleges had institutional laboratory schools with a median enrollment of 327 pupils which were typically organized on the six-three-three plan. Some form of affiliation with public schools was had by 65 per cent of these schools, and for nearly three-fourths of these the affiliations included rural schools. The supervisory costs in the typical arrangement are paid by the college; the teachers' salaries are paid jointly, although the larger share generally is paid by the district; and the other school costs are paid by the school district. Only 8 of the 85 schools use the cadet plan, and only 2 exclusively. By this scheme a student teacher takes full responsibility for the work of a regularly employed teacher for a time

and thus relieves the board of education from appointing the full quota of teachers. The author closes his discussion with seven proposals regarding organization of laboratory schools, one of which needs further consideration in the opinion of the reviewer.

The director of training should be head of the professional department and dean of the institution in order that theory, subject-matter, and practice may be properly co-ordinated.

J. MacLatchy

Lewis, E. E., and Williams, O. H. "Creative Management for Teachers." Ann Arbor, Michigan: Edwards Brothers, 1931. 254 pp. (Lithoprinted)

In the language of its authors this is a book "on child, class, and school management from the viewpoint of progressive education." This viewpoint is exhibited in each of the fifteen chapters and upon nearly every one of the two hundred fifty-four pages of the book. The first nine chapters are somewhat general in nature. The last six chapters embody the authors' attempt to come to grips with the subject. In the last chapter is to be found in condensed form the very essence of the authors' philosophy of school management as applied to the work of the teacher, for herein is shown with a number of helpful concrete examples the place of the teacher in policy-making.

Especially valuable features of the book are its numerous questions, problems, and exercises for further study and discussion. Their use will not only tend to save the time of students using the text, but, better still, save discussion of its philosophy and principles from a too common fate, divorce from all reality in actual school situations.

The selected references which follow each chapter constitute a somewhat exhaustive annotated bibliography. The source-book material likewise appended to every chapter but one is a feature that must be welcomed by all users of the book to whom only limited library facilities are accessible.

J. O. Engleman
Kent State College

Gaumnitz, Walter H. *Status of Teachers and Principals Employed in the Rural Schools of the United States.* Washington: United States Department of the Interior, 1932. iv+122 pp. (Office of Education Bulletin, 1932, No. 3)

The salaries, training, experience, and length of school term taught by teachers and principals in rural schools for the year 1930 are given in considerable detail. The information, collected through questionnaires to county, district, or town superintendents, covered 200,000 white teachers and 13,481 negro teachers, some 55 per cent of such teachers in communities with populations of less than twenty-five hundred. Interesting trends in salaries received in 1921, 1925, and 1930 are presented by states. This report is a valuable addition to the information concerning our rural school. Trends in length of school term, in training and in experience of teachers, and separate data regarding high-school teachers would have enhanced the worth of this valuable study.

Earl W. Anderson

BUREAU INTERNATIONAL D'EDUCATION. *L'Education en Pologne.* Geneva, Switzerland: Bureau International d'Education, 1931. 263 pp.

The eleven chapters of this paper-bound book contain a collection of articles about the schools of Poland under the general titles: on public instruction in Poland, psychology investigations upon the child, moral education, art education, and the organization of schools and of instructions. In the last chapter, "Impressions de Visiteurs Etranger," M. Adolph Férriere, direct-adjount du Bureau International d'Education says: "The Poles have undertaken a vast and most varied program. Nothing daunts them. They have chosen the better part."

J. MACLATCHY

Books to Read

THORNDIKE, E. L., AND THE STAFF OF THE DIVISION OF PSYCHOLOGY OF THE INSTITUTE OF EDUCATIONAL RESEARCH. *Fundamentals of Learning.* New York: Teachers College, Columbia University, 1932. xvii+638 pp.

It is easier to review than to read this book. Indeed, it is not a book to be read but to study carefully, for it is essentially a monograph. The results are summarized chiefly in *Human Learning* (1931). As in the former work, one has always an uneasy suspicion that the case is prejudiced by an oversimplification in the definition of learning. Yet it is hard to put one's finger on anything objectionable; perhaps what Thorndike calls learning is an essential part but not the whole of that complex human activity. But whatever one thinks of his general theory, here is an overwhelming array of facts and cogent interpretation of these facts. It is safe to say that no one in the next few years may write or talk about learning without first digesting this book. Disagreement with Thorndike is going to be pretty difficult hereafter unless one has first amassed a comparable mass of contradictory facts or has shown ways in which Thorndike's interpretations are unsound. Neither is a task to be lightly undertaken.

HORACE B. ENGLISH

LEARNED, WILLIAM SETCHEL. *Realism in American Education.* Cambridge, Massachusetts: Harvard University Press, 1932. vi+70 pp.

This Inglis Lecture will be a source of comfort to that group in education whose interest has been turned whole-heartedly upon the measurement of that which is readily measurable, and it will be nothing less than a perpetual irritant to those who had hoped to steer education clear of the deadening limitations of strictly informational ends. Realism in American education turns out, in the final analysis, to be a frank recognition, *sans* sentiment, that, whatever else there may be of value in education, the one thing we can put our fingers on is a sequential and orderly arrangement of knowledge. This being true, the thing to do is to move immediately toward mastery of this knowledge. With this much done, we may entertain such hopes as our sentiments dictate.

Now all of this comes out into the open after the author has made out an excellent case against administrative routines that dull the educative process and ignore the individual in the interest of institutional loves in the

form of credits, marks, and the like. Indeed, the case against the routinized aspects of American education is presented with such effectiveness that it is nothing short of a complete let-down to find that the author opens the way for a new set of routine procedures. The new pattern is colored by the mastery of knowledge sequences, determined objectively. Individual interests and capacities, which seem to be coming in for large consideration in this realistic view, are herded in straight lines through ordered knowledge. And at this point the reader may wonder just what, apart from the measurement of results that are predetermined by virtue of their susceptibility of measurement, has been achieved by this fling in realism in American education. The wonder is justified.

H. Gordon Hullfish
Dalton School, New York City

Monroe, Paul, Editor. *Essays in Comparative Education, Republished Papers.* Vol. II. New York: Columbia University, Bureau of Publications, 1932. viii+311 pp. (International Institute Studies, No. 15)

Twenty-four papers are included in this collection. Almost all of them were originally used as public addresses, a fact which helps to characterize them. They deal with the Far East, China, Japan, the Philippines, with Russia, Yugoslavia, Austria, and the United States. There are also some general papers dealing with cultural traditions, student life, missionary problems, and "the school of the future." The papers are for the most part the harvest of the last three or four years, but some of them go back to 1928 and one to 1924.

For statistics and organization we must look elsewhere; here we find concrete examples, personal experiences, conversations with educational and political leaders. The materials are intended to be typical and genuinely illustrative, and they were gathered not by a traveler but by a scientific investigator. The second quality of these papers is that they do not merely report but also attempt to interpret the educational activities of the nations to each other. Their aim is dispassionate understanding. Attention is given to the economic, religious, and cultural situations which condition the school, and also to the historical developments which have produced these situations. The direct approach and the broad interpretation make this a stimulating series of essays. Especially interesting is the attempt to distinguish between the cultural revolution and the politico-economic revolution in Russia.

H. C. Good

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School and college administrators who are interested in helping students to choose their careers more wisely, and who wish information to assist them in planning programs of vocational guidance, may get such information without charge from the National Occupational Conference, 522 Fifth Avenue, New York City.